

## REMARKS

The last Office Action of August 21, 2003 has been carefully considered. Reconsideration of the instant application in view of the foregoing amendments and the following remarks is respectfully requested.

Claims 21-23 have been corrected as claims 18-20 , so that Claims 17-20 are pending in the application. Claim 19 has been amended. No claims have been canceled. Claim 21 has been added. A total of 4 claims is now on file. No claim surcharge is due.

Claims 17 to 20 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Pat. No. 6,70,316 (hereinafter "Sena").

The Examiner has objected to the Applicant's numbering of claims 21-23 whereby according to the Examiner claims 18-20 were never cancelled. Applicant therefore accepts the current numbering as being from 18-20 with a new claim 21 added.

With respect to the priority of the application, applicant states that priority is claimed under 35 U.S.C. § 119. Priority documentation was supposed to have been forwarded to the Office through the International Bureau. However, if documentation thereof is still required, the Examiner is requested to advise the undersigned.

**REJECTION OF CLAIM 19 UNDER 35 U.S.C. §112 SECOND PARAGRAPH**

The Examiner pointed out that the term "in particular" renders the claim indefinite. In response thereto, applicant has presented new claim 21 in which the preferred feature is recited. The rejection is now moot.

Withdrawal of the rejection of claim 19 under 35 U.S.C. §112 second paragraph is respectfully requested.

**REJECTION OF CLAIMS 17-20 UNDER 35 U.S.C. §103(a) AS BEING UNPATENTABLE OVER SENA.**

The rejection is respectfully traversed.

Applicant has previously amended claim 17 to recite that the intensity measurement of the light scattering in the probe is exclusively from the DNA and RNA thereby distinguishing from the prior art cited in prior Official Actions. Subsequently applicant filed an RCE. The Examiner has now cited a further reference to Sena against the application. Sena is directed to Diagnostic Applications of Double D-Loop Formation.

The Examiner points to col. 39, lines 20-40 as teaching the claimed invention. However, Sena teaches in col. 39, lines 20-40 synthesis of a DNA probe using PCR and in a further step the synthesized DNA probe is centrifuged through a column and recovered by ethanol precipitation. In a further step, the DNA probe

is then resuspended in a buffer. Subsequent measurements are directed to the concentration by measuring OD at 260nm, i.e. by a light absorption measurement. However, these steps are familiar to those skilled in the art.

The invention as presently claimed differs from the Sena in that it is directed to the detection of the amplification of DNA and/or RNA sequences. The steps taken are as follows:

a) providing a sample containing at least a DNA or RNA sequence amplification reaction mixture; b) inputting light into the sample; c) detecting a scattered light intensity produced by the sample with a detector; d) treating the sample under conditions suitable for amplifying at least said DNA or RNA sequences in order to produce amplified DNA and/or RNA sequences; e) determining the amplification of DNA or RNA sequences in the sample from an increase of the scattered light intensity, which light is scattered exclusively by the DNA or RNA.

In Sena in contrast, there is no teaching of the features as recited in step c) and e) of the present invention. Sena only determines light absorption, hence only the simple measuring of OD. In contrast thereto, in the claimed invention the intensity of the scattered light is determined. Through the feature of step e) the outcome of the PCR amplification reaction can be monitored online. With the teaching in Sena it is only possible to directly measure a sample without more steps to be taken that is after some time. With the method of the present invention the intensity of light scattered by DNA or RNA is observed. There is no measurement of this type in Sena. The method of the present invention has the advantage over the prior art that the manner of determining the outcome of the a

PCR amplification is very simple and significantly, the need for steps such as centrifugation, precipitations and resuspension as taught by Sena are thus superfluous.

While absorption refers to a process whereby energy of light radiation is transferred to a medium through which it is passing, the measurement of the intensity of scattered light refers to a process whereby energy is removed from the beam of light radiation and reemitted without appreciable change in wavelength.

There is nothing in Sena that points to the need or a motivation to use any other method of detecting the amplification than the one mentioned. Sena is not directed to method of determining an amplification reaction, absorption measurements are mentioned in passing as part of a conventional manner in which to determine the OD of the reconstituted reaction products. Therefore, Sean neither point into a direction of a different method not gives any motivation to do so.

Accordingly, the present invention claims a very different method to measuring the results of an amplification reaction, which patentably distinguishes from the cited reference.

It is noted that each named inventor of the subject matter of the instant application contributed at least to one of the claims, presently on file and that the inventor and date of invention of each claim was commonly owned.

Withdrawal of the rejection of claims 17-20 under 35 U.S.C. §103(a) and allowance thereof are thus respectfully requested.

## **GENERAL COMMENTS**

In this connection, it is noted that the Examiner has acknowledged applicants' claim for priority but questioned the basis for the priority. Applicant states that its priority is claimed under 35 U.S.C. 120. If a copy of the priority document is not on file, applicant will provide the documentation. Since the present application was formerly prosecuted by another agent, applicant is not fully apprised of what documentation was filed. Applicant believes that the issues directed to the claim of priority has been addressed and obviated, however if there are any remaining issues, the applicant respectfully requests to be apprised of any omission.

## **CONCLUSION**

Applicant believes that when the Examiner reconsiders the claims in the light of the above comments, he will agree that the invention is in no way properly met or anticipated or even suggested by any of the references however they are considered.

None of the references discloses a method of measuring amplified DNA and/or RNA sequences directly by determining the intensity of light scattering directly from the sample probe.

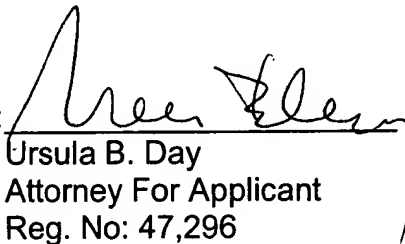
In view of the above presented remarks and amendments, it is respectfully submitted that all claims on file should be considered patentably differentiated over the art and should be allowed.

Reconsideration and allowance of the present application are respectfully requested.

Should the Examiner consider necessary or desirable any formal changes anywhere in the specification, claims and/or drawing, then it is respectfully requested that such changes be made by Examiner's Amendment, if the Examiner feels this would facilitate passage of the case to issuance. If the Examiner feels that it might be helpful in advancing this case by calling the undersigned, applicant would greatly appreciate such a telephone interview.

The Commissioner is hereby authorized to charge fees, which may be required, or credit any overpayment to Deposit Account No. 06-0502.

Respectfully submitted,

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